

## DOH ARBOVIRUS WEEKLY UPDATE

July 27, 2003

West Nile virus is an emerging infectious disease, and only appeared in the eastern United States in 1999. In 2002, the virus spread to forty-four states in the United States; Oregon, Nevada, Utah and Arizona documented no West Nile virus activity. As of 23 July 2003, West Nile virus has been detected in 35 states. As part of the West Nile virus surveillance system, the Department of Health (DOH) conducts human, avian, mammal and mosquito surveillance and keeps extensive database and spreadsheet records detailing the surveillance. DOH established a West Nile virus Call Center number at 202-535-2323, a health care and question line at 202-671-0733 and extensive web site information at <http://www.dchealth.dc.gov/>.

The chances of developing symptoms of West Nile virus from the bite of a mosquito are very remote. Much less than one percent of mosquitoes test positive for the virus in areas where the virus is present. And, if bitten by an infected mosquito, a person has less than a one percent chance that he or she will develop symptoms. Generally, the symptoms are very mild and may not even be noticed. Only in very rare cases will the symptoms be severe. Individuals over the age of 60 are the population most at risk. For 2002, the median age for human disease was fifty-five and the median age for mortality was 78. For 2003, the median age of WNV positive human cases is 70. Any person who suspects that they have the virus should contact their doctor immediately.

DOH has trained staff to assist residents with identifying and eliminating potential mosquito-breeding sites and to speak at neighborhood meetings and health fairs. The fundamental components of the West Nile virus plan are prevention and personal protection.

The West Nile virus program is a fluid program that is continually evaluated and altered to protect the public. Mosquito surveillance has been enhanced to assess the risk to public health and safety in the District. It is paramount to track positive mosquito pools and species. As a result of this increased mosquito surveillance, new species of mosquitoes have been identified as positive for West Nile virus in the District.

In 2002, six pools of *Aedes albopictus* tested positive in the District. This species is a daytime human biter and causes increased concern. Previously only *Culex spp.*, a dawn and dusk feeder, tested positive. As a result, DOH has added precautions of protecting residents against mosquito bites at all times during the day and not just dawn and dusk.

Nationally, per CDC, in 2002, there were 4156 cases of West Nile virus infection, including 284 deaths, in the United States. The outbreak was the largest since the virus first appeared in the Western Hemisphere 4 years ago. During the 2002 outbreak, CDC officials confirmed the first known cases in which West Nile was transmitted through organ transplants and blood transfusions. The possibility the virus could be spread through breast milk or sexual contact also has been studied. Although most people who contract West Nile have no symptoms and those who do normally suffer little more than flu-like illness, it is believed they still can carry small amounts of the virus in their blood for several days.

## **Accuracy of Blood Supply Test Confirmed**

Texas: accuracy of blood supply test confirmed

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[Dr Rossmann has forwarded the following additional information concerning the West Nile virus positive blood donation given by a woman in Texas last month (see part [1] of West Nile virus update 2003 - USA (15) 20030711.1706). I am grateful for Dr Rossmann's prompt and informed response to my request for information. Since the original report of the positive blood donation was received, 3 suspected human cases of West Nile virus infection have been reported from Montgomery county and northwest Houston, Texas. - Mod.CP]

The virus was sequenced (by Roche) to confirm that it is West Nile virus. Donor follow-up will continue as part of the clinical trial for this test. The donation was given the week of 22 Jun 2003. In our area there has been bird and mosquito activity for some time, preceding the human cases that have now also been reported (see part [6] of West Nile virus update 2003 - USA (15) 20030711.1706).

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Susan Rossmann, MD, PhD  
Medical Director  
Gulf Coast Regional Blood Center  
1400 La Concha Lane  
Houston TX 77054  
<srossman@giveblood.org>

## **Positive Blood Donors Identified**

Colorado: blood from 4 donors positive for West Nile virus

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4 people who donated blood to the Bonfils Blood Center in the past 15 days have tested positive for West Nile virus, the mosquitoborne disease that killed 284 Americans last year. A new test that the center began using on 1 Jul 2003 on all donated blood [detected] the virus, Bonfils spokeswoman Jessica Maitland said on Tue 15 Jul 2003. The blood was quarantined and not given to any patients. 2 cases were reported on Friday and 2 on Monday. None of the donors reported any symptoms. Maitland said confirmation testing could take 2 weeks. The 4 donors are letting doctors draw blood to see whether they have developed antibodies to the virus.

In 2002, the first year that West Nile virus was found in Colorado, 14 residents tested positive for the virus. All recovered. The head of communicable diseases for the state Department of Public Health and Environment said he would be surprised if each of the 4 donors is confirmed to have been infected. It's not unusual for a new test to show many false positive results, Dr Ken Gershman said.

Maitland and Gershman said the blood supply in Colorado and across the country is safe. Bonfils is one of 22 large blood centers around the nation to use new screening tests. The center also includes specific West Nile symptoms on the screening checklist for prospective donors, Maitland said. West Nile virus infection usually starts with a fever, headache, muscle aches, and fatigue.

[As of Wed 16 Jul 2003 (see below), West Nile virus has been detected in both wild birds and mosquitoes in Colorado. There have been no reports of West Nile virus infection of equines, humans, or sentinel flocks in Colorado. - Mod.CP]

## **STATEMENT FROM USDA APHIS re: ADVERSE EFFECTS ON PREGNANT MARES**

Excerpted from ProMED mail (Id: 20030724.1806)

Source: Aphis website [edited] <<http://www.aphis.usda.gov>>, accessed July 23, 2003

Some recent stories have suggested that the Fort Dodge Animal Health WNV Vaccine approved by the USDA may cause pregnant mares to abort or give birth to deformed foals. The misleading information in those articles has sparked many anxious phone calls from horse owners, veterinarians, and others involved with horses.

Horse owners should be assured that the vaccine is safe, and it should be used as protection against West Nile Virus. Millions of doses of the vaccine have been used since the USDA's Center for biologics approved its use in 2001.

The Center for Veterinary Biologics, within USDA's Animal and Plant Health Inspection (APHIS), maintains a toll-free telephone hotline (800-752-6255) and a mailbox on its web site and actively encourages veterinarians and other vaccine customers to report problems with vaccines. <<http://www.aphis.usda.gov/vs/cvb>>

To date, there have been a very small number of reports regarding a possible association between the use of WNV vaccine and abortions, birth defects, or other reproductive anomalies or failures. It does not appear that there is a relationship between WNV vaccine use and these reproductive problems or any other major problems. The Center and the vaccine manufacturer will continue to collect, monitor, and track the performance of this vaccine.

### **Rapid West Nile Virus Test**

On July 9, 2003, Response Biomedical Corp. introduced the market-ready RAMP\* West Nile Virus Test, a high sensitivity rapid, quantitative environmental test capable of detecting low levels of the virus in mosquitoes and crows. The RAMP West Nile Virus Test was developed and evaluated in consultation

with leading scientists at Health Canada's National Microbiology Lab. The RAMP System consists of a portable fluorescent Reader and single-use, disposable Test Cartridges

Response Biomedical develops and manufactures rapid on-site RAMP tests for clinical and biodefense applications providing reliable information in minutes, when and where it is needed. RAMP tests are commercially available for the early detection of heart attack, and biodefense applications including the rapid on-site detection of anthrax, smallpox, monkeypox, ricin and botulinum toxin.

Christopher Mallison

Product Manager

Response Biomedical Corp.

> 8855 Northbrook Court

> Burnaby, BC Canada V5J 5J1

> Phone: 604.681.4101

> Fax: 604.412.9830

> Email: [cmallison@responsebio.com](mailto:cmallison@responsebio.com)

> [www.responsebio.com](http://www.responsebio.com)

## **2003 CDC National West Nile Virus Case Summary**

United States: West Nile Virus Activity; Thu 17 Jul to Wed 23 Jul 2003

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This report summarizes West Nile virus (WNV) surveillance data reported to CDC through ArboNET as of 8 a.m., Mountain Daylight Time, Wed 23 Jul 2003.

During the reporting week of Thu 17 Jul to Wed 23 Jul 2003, 6 human cases of WNV infection were reported from 5 states (Iowa, Minnesota, Ohio, South Dakota, and Texas). During the same period, WNV infections were reported in 309 dead corvids (crows and related species), 69 other dead birds, 12 horses, and 144 mosquito pools.

During 2003, a total of 11 human cases of WNV infection have been reported from Texas (n = 5), Alabama (n = one), Iowa (n = one), Minnesota (n = one), Ohio (n = one), South Carolina (n = one), and South Dakota (n = one). Among these cases, 7 (64 percent) occurred among men; the median age was 70 years (range: 42 to 80 years), and the dates of illness onset ranged from 29 May to 13 Jul 2003. In addition, 551 dead corvids and 150 other dead birds with WNV infection were reported from 34 states; 55 WNV infections in horses have been reported from 16 states (Alabama, Arkansas, Colorado, Georgia, Kansas, Kentucky, Minnesota, Missouri, Nebraska, New Mexico, North Carolina, North Dakota, Oklahoma, Texas, Wisconsin, and Wyoming), and one WNV infection was reported in a dog (South Dakota). During 2003, WNV seroconversions have been reported in 56 sentinel chicken flocks from

Florida, Iowa, and North Carolina. South Dakota reported 3 seropositive sentinel horses; 327 WNV-positive mosquito pools have been reported from 15 states (Colorado, Georgia, Illinois, Indiana, Kansas, Maryland, Massachusetts, Michigan, Mississippi, Nebraska, New Jersey, South Dakota, Texas, Virginia, and Wisconsin).

### **District-Wide Mosquito Data**

The US Army Center for Health Promotion and Preventive Medicine –North (USACHPPM-North) tests all mosquitoes collected within the District. Specimens are submitted from Department of Defense Installations, National Park Services and the Department of Health. As of the Pool and Testing Log Report dated 24 July 2003, 3012 female mosquitoes sorted in 329 pools have been tested. All results are negative. The Department of Health has 512 female mosquitoes awaiting testing. Specimens have been submitted from DoD installations at Walter Reed Army Medical Center and Ft. McNair, National Park Services locations at Rock Creek Park, National Capital Parks-East and the C & O Canal, East. Department of Health trap locations are located in each Ward of the District.

Eastern Equine Encephalitis: All mosquito pools to date have tested negative for EEE.

Malaria: 2 pools of Anopheles mosquitoes from Ft. McNair tested negative for Vivax malaria by both VecTest and PCR.

## **STATUS OF DISTRICT PROGRAMS:**

### **CALL CENTER**

- DOH established a West Nile Virus Call Center at 202-535-2323 effective April 11, 2003. Residents and visitors are encouraged to call the Call Center to report standing water, mosquito concerns, and dead birds and to request advice and assistance.
- The Call Center, year-to-date, has received over 242 calls regarding standing water, mosquito infestations, larviciding and dead birds.

### **HUMAN SURVEILLANCE**

- In 2003, year-to-date, no specimens have been West Nile virus probable in the District.
- Currently, there are 20 cases of aseptic/bacterial/viral meningitis in the District. DOH is assisting hospitals with reporting these cases. There are no pending cases as this time.
- DOH has contacted all hospitals to review protocol for WNV-suspect cases.
- DOH staff conducts active human surveillance.
- DOH staff distributed West Nile virus Physician Alerts by blast fax to health care providers and hospitals detailing the West Nile virus case definition, reporting and specimen collection and submission criteria.

- DOH staff contacts hospital infectious disease practitioners weekly to determine if any patients meet the testing and reporting criteria, effective May 15.
- DOH staff prepares, processes, transports and submits human specimens for testing.
- In 2001, 20 human samples were submitted for testing. All samples tested negative.
- In 2002, 80 human samples were submitted for testing. Thirty-one samples were positive. Three samples were probable, twenty-eight samples were negative and eighteen samples were considered pending because information was not complete.

## **MOSQUITO SURVEILLANCE**

- As of 18 July 2003, 2694 female mosquitoes placed into 277 pools have been collected within the District and tested for West Nile virus; all have been negative.
- Nineteen gravid traps have been set for the week of July 21-27 in Wards 1, 2, 3, 4, 5 and 7. Two mosquito magnets have been set on Tuesday, July 15 for collection on Tuesday, July 22. The magnets are located in Wards 2 and 4.
- Specimens collected from the week of July 14-20 are as follows; Ward 1-11, Ward 3-36, Ward 4-24, Ward 5-7 and Ward 7-146 female mosquitoes. Mosquitoes are sent to US Army Center for Health Promotion and Preventive Medicine, Ft. Meade, MD to be sorted into pools. (A mosquito pool consists of 1-25 female mosquitoes of a specific genus and species from the same trap, location and trap night.)
- YTD, 1157 female mosquitoes have been collected by DOH and sent for testing.
- The Department of Health currently has 287 female mosquitoes awaiting testing.
- Trapping began the first week in June. Trap locations have been determined.
- DOH staff sets gravid traps, throughout the District in each ward per an established grid pattern. A collaborative effort between DOH, National Park Services (NPS) and the Department of Defense (DoD), ensures that trapping locations incorporate all areas of the District.
- DOH staff set mosquito traps and collect specimens from over 30 traps. Traps are set for 2 trap nights per week. Mosquitoes are sorted, prepared for testing and transported the Ft. Meade, MD for arboviral testing.
- The US Army will test all District mosquito specimens for West Nile and other relevant arboviruses and malaria, depending on species.
- In 2001, 870 pools were collected in the District and submitted for testing. Three pools tested positive.
- In 2002, 1315 pools were collected in the District submitted for testing. 84 pools tested positive, including 5 pools of *Aedes sp.* and 79 pools of *Culex spp.* Locations of positive pools are as follows: 3100 blk Conn. Ave (1), Rock Creek Park (17), Ft. McNair (47), US Soldier and Airmen's Home (19).
- In 2002, there were 19 individual *Anopheles* mosquitoes (possible carrier of malaria) collected and placed into eight pools that were tested for malaria. All pools tested negative.

## **AVIAN SURVEILLANCE**

- 2003: Year to date there have been 105 dead bird reports with the following break-down by ward; Ward 1-6, Ward 2-10, Ward 3-31, Ward 4-20, Ward 5-23, Ward 6-16, Ward 7-13, Ward 8-16.

- Week                      Bird Reports

April 14-20	4
April 21-27	3
April 28-May 4	6
May 5-11	5
May 12-18	7
May 18-25	3
May 28-June 1	26
June 2-8	19
June 9-15	12
June 16-22	7
June 23-29	5
June 30-July 6	7
July 7-13	9
July 14-20	16
July 21-27	15

- DOH no longer collects and tests dead birds because West Nile virus is considered endemic in the District. Further positive results of dead bird testing do not provide any relevant information. Information will be collected on sightings of dead birds for empirical information.
- Sightings of dead birds are received and compiled at the Call Center. Residents are asked to report the location and physical description of all dead birds. A database will be established and maintained to capture all information.
- Residents are encouraged to dispose of the birds. Specific detailed instructions for disposal are available on the DC Website and at the Call Center.
- In 2000, the first positive bird was collected on September 28, with a total of 5 positive birds for the year.
- In 2001, the first positive bird was collected on July 10. Nine hundred fourteen (914) birds were collected, four hundred forty-four (444) were tested and three hundred sixty (360) tested positive, with a percent of positivity of 81.08%.
- In 2002, the first positive bird was collected on May 1. Nine hundred five (905) birds were collected, three hundred forty (340) were processed for testing, thirty-one (31) tested negative, one hundred thirty-four (134) were disposed of and one hundred seventy-five (175) birds tested positive with a rate of positivity of 84.95%.
- The positive bird breakdown by ward for 2002 was Ward 1-10, Ward 2-8, Ward 3-123, Ward 4-12, Ward 5-2, Ward 6-7, Ward 7-16, and Ward 8-2.

## **MOSQUITO CONTROL**

- Year-to-date 2003, DOH staff has larvicided 2137 catch basins. The Ward breakdown is as follows; Ward 1-182 catch basin; Ward 2-15 catch basins; Ward 3-685 basins; Ward 4-456 basins; Ward 5-297 basins; Ward 6-196 basins; Ward 7-159; Ward 8-215 catch basins.
- Year-to-date 2003, DOH staff has applied larvicidal treatments in alleys with improper drainage, ponds, swamps and park sites in 40 locations, 9 of which are constant bodies of water.
- DOH staff larvicide in response to WNV positive human test results, WNV positive mosquito results, mosquito density and nuisance areas and community concerns. The larvicide, a biological product that kills mosquitoes in the larval stage, is placed in catch basins and in areas of standing or stagnant water.
- In April of 2002, DOH staff began larviciding in the District at locations of positive birds and mosquitoes from the previous year in an eight square block area at each location.
- The larvicide application is repeated approximately every 5-6 weeks.
- Larviciding has been determined to be more effective over a period of time than adulticiding. In 2002, mosquito catches were significantly reduced in areas where larviciding efforts were conducted.
- In 2001, DOH staff larvicided three thousand four hundred ninety-six (3,496) catch basins.
- In 2002, DOH staff larvicided ten thousand eight hundred thirty-five (10,835) catch basins.
- The District does not expect to spray for mosquitoes because of low efficacy; kill offs of non-target species and potential health risks to a high population of persons affected with respiratory problems and compromised immune systems.
- Killing mosquito larva and eliminating mosquito-breeding sites are the most effective practices to reduce the numbers of mosquitoes.
- The Center for Disease Control and Prevention (CDC) recommends that larvicide be used to reduce mosquito populations.
- Year-to-date 2003, DOH staff has larvicided 1591 catch basins. The Ward breakdown is as follows; Ward 1-93 catch basins; Ward 2-93 catch basins; Ward 3-651 basins; Ward 4-489 basins; Ward 5-48 basins; Ward 6-73 basins; Ward 8-39 catch basins.
- Year-to-date 2003, DOH staff has applied larvicidal treatments in alleys with improper drainage, ponds, swamps and park sites in 25 locations, 8 of which are constant bodies of water.

## **MAMMAL SURVEILLANCE**

- DOH staff conducts passive mammal surveillance.
- DOH staff distributed information to vets, pet shops, and horse stable managers detailing reporting and specimen collection and submission criteria and protocol.
- No mammals have tested positive in the District for the last four years.
- Letters to all veterinarians in the District have been sent to assist veterinarians in recognizing, submitted samples for testing and reporting West Nile virus cases.



## **OUTREACH AND EDUCATION**

- In 2003, year to date, approximately 18,157 brochures have been distributed to elderly homes, day care providers, neighborhood services, door-to-door and to all DC Libraries. Literature has also been available at various events.
- DOH Representatives have participated in 8 media interviews with CNN, Channel 7/8, Washington Post, WHUR Radio, Channel 9, Metro Weekly News, Washington Times and Channel 5.
- DOH has educated participants of the DC Government Safety Fair by setting up a booth, passing out literature and speaking with concerned citizens.
- DOH has prepared an informational brochure emphasizing prevention and protection. The brochure has contact information for the Call Center and website. It has been translated into Spanish, Chinese, Korean and Vietnamese.
- DOH has developed space on the DOH website to provide residents with information, including, the District Arbovirus Surveillance and Response Plan for 2003, methods of controlling mosquitoes, CDC questions and answers, recent press releases and weekly updated surveillance reports.
- DOH has developed an informational script and power point presentation for community presentations.
- In 2002, DOH staff distributed brochures door to door to 46,987 residences, and spoke to residents about prevention and protection techniques. DOH distributed approximately 201,250 brochures in bulk.
- Brochures have been distributed by request to private citizens, day care centers, senior citizen homes, residential housing, hospitals, libraries, schools, parks and recreation centers, churches, other District agencies, NSC Coordinators and all ANC Commissioners.